SCIENTIFIC NOTE

TWO NEW ORTHOPTERAN HOSTS OF NORTH AMERICAN POLIDEINI (DIPTERA: TACHINIDAE)[1]

James E. O'Hara[2] and David A. Gray[3]

The Polideini are a moderately sized tribe in the subfamily Tachininae with 36 genera and about 140 described species (O'Hara 2002). All but a few of the species are restricted to the New World. The tribe was redefined and the genera and species of America north of Mexico were revised by O'Hara (2002). In that work, all known hosts of the polideine species of America north of Mexico were listed and they include the greatest range of arthropod taxa of any tribe in the Tachinidae: various Lepidoptera, Hymenoptera (Diprionidae), Orthoptera (Gryllidae and Raphidophoridae), Blattaria (Blattellidae), Chilopoda (?*Geophilus* sp.), Scorpiones (Vaejovidae), and Araneae (Antrodiaetidae) (O'Hara 2002). Two new orthopteran hosts of North American Polideini were recently discovered by the junior author and are reported here. These new records are particularly noteworthy because orthopteran hosts of Tachinidae are not as well known as hosts in the major orders attacked, Lepidoptera, Coleoptera, Hymenoptera (Symphyta), and Hemiptera.

Dichocera lyrata Williston

Sixteen specimens of *Pristoceuthophilus marmoratus* Rehn (Orthoptera, Raphidophoridae) were collected by the junior author in mid to late October 2003 from Topanga Canyon, Santa Monica Mountains, Los Angeles County, California, in an area of mixed coast live oak (*Quercus agrifolia* Nee) and grassland bordering chaparral. The live crickets were returned to the laboratory for behavioral studies. A single tachinid maggot emerged from one of the crickets on January 7, 2004. It was reared to an adult and subsequently identified by the senior author as a male *D. lyrata.* There are no definite host records for *D. lyrata* in the literature, but a *Dichocera* "probably *lyrata*" specimen collected from Ithaca, New York, was reportedly reared from the raphidophorid *Ceuthophilus guttulosus guttulosus* Walker (Chinn and Arnaud 1993, O'Hara 2002).

Exoristoides johnsoni Coquillett

Six specimens of *Gryllus integer* Scudder (Orthoptera: Gryllidae) were collected by the junior author from high desert near Holbrook, Navajo County,

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[2] Invertebrate Biodiversity, Agriculture and Agri-Food Canada, 960 Carling Avenue, Ottawa, Ontario, Canada, K1A 0C6. E-mail: oharaj@agr.gc.ca.

[3] Department of Biology, California State University Northridge, 18111 Nordhoff Street, Northridge, CA 91330-8303 U.S.A. E-mail: dgray@csun.edu.

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Arizona, 1590 m (34.93°N, 110.13°W), on August 9, 2002. On the same day, a tachinid maggot emerged from a captured adult male cricket. The maggot was reared to an adult and subsequently identified by the senior author as a female *E. johnsoni.* This tachinid species has also been reared from the gryllids *Anurogryllus arboreus* Walker, *Gryllus pennsylvanicus* Burmeister and "*Gryllus* spp." (O'Hara 2002).

There is no published information on the reproductive habits of *D. lyrata* or *E. johnsoni,* but we can infer a little about their habits from an examination of their female reproductive systems and by comparison with related tachinids. A pinned female of each species was dissected and both contained a number of partially and fully developed first instar larvae; ca. 1050 larvae in *D. lyrata* and fewer than 100 in *E. johnsoni.* The reproductive capacity of the examined *E. johnsoni* appeared to be greater than the number of larvae observed, perhaps in the range of 200, but certainly far fewer than the observed number in the *D. lyrata* specimen, which seemed to be near capacity. This difference in apparent fecundity probably means that the likelihood of an individual *D. lyrata* larva successfully parasitizing a host is less than that of an *E. johnsoni* larva by nearly a factor of ten. Be that as it may, the larvae of both species are of a motile type common within the Tachininae suggesting that ready-to-hatch eggs are deposited on a substrate, most likely in response to host stimuli, and the first instars either actively search for a host or lie in wait for a passing host.

The tachinid specimens and their puparia have been deposited in the Canadian National Collection of Insects, Ottawa, Canada. The series of *P. marmoratus* from which the parasitized individual originated was identified by Ted Cohn (Adjunct Curator, Insect Division, University of Michigan, Museum of Zoology, Ann Arbor, Michigan). The parasitized *G. integer* was identified by the junior author. The remains of the hosts were not retained.

LITERATURE CITED

Chinn, J. S. and P. H. Arnaud, Jr. 1993. First records of *Dichocera* (Diptera: Tachinidae) reared from *Ceuthophilus* (Orthoptera: Rhaphidophoridae) hosts in Nevada and New York. Pan-Pacific Entomologist 69: 176-179.

O'Hara, J. E. 2002. Revision of the Polideini (Tachinidae) of America north of Mexico. Studia dipterologica. Supplement 10, 170 pp.